

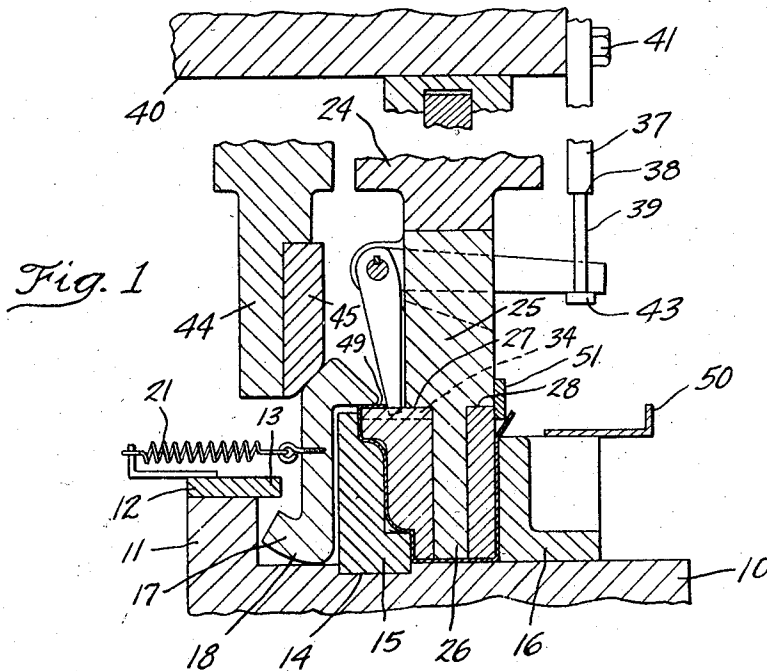
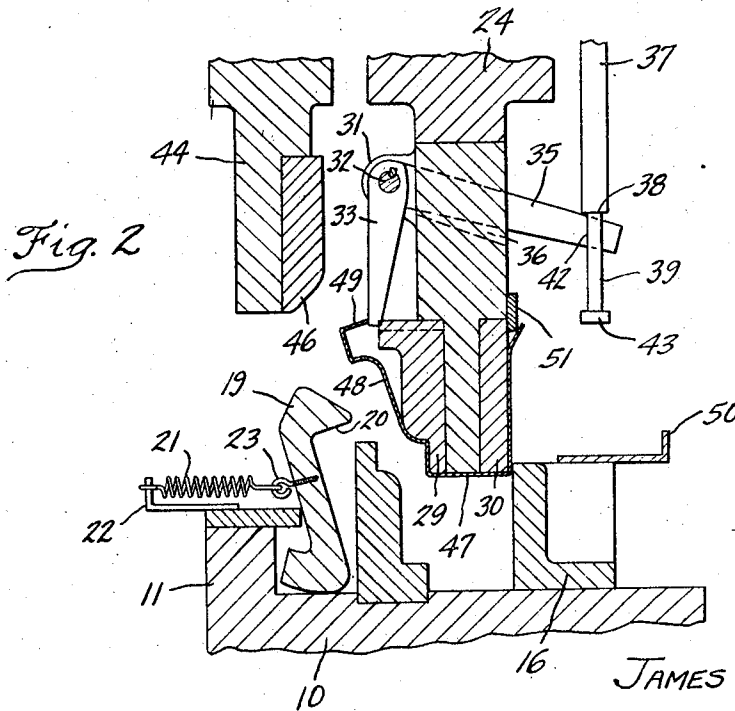
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METHOD OF AND MEANS FOR PRODUCING ORNAMENTED EAVES

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METHOD OF AND MEANS FOR PRODUCING ORNAMENTED EAVES.

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At the present time, it is the practice to make square ornamented eaves in two distinct operations,—namely, first bending the metal to form the ornamentations and one square edge, and, second, bending the metal into a square trough formation. Thus, the sheet metal has to pass through a press two different times and the dies of the press have to be changed for each operation. It can readily be seen that this practice is very expensive, does not permit quantity production without a large outlay of labor and equipment and makes likely deforming the metal in passing it through the dies twice. It is, therefore, the primary object of my invention to provide means whereby a complete ornamented square cornered eave can be made in one operation, thereby increasing production, eliminating the changing of dies, decreasing the cost and making a more perfect product.

Another object of my invention is to provide means for aiding in the ejecting of an eave from my improved device after the same has been formed in one operation.

With these and other objects in view, my invention consists in the arrangement, combination and construction of the various parts of my improved devices and the methods and means for making the same, as described in the specification, claimed in my claims and shown in the accompanying drawings, in which:

Fig. 1 is a sectional view of punches and dies used in producing an eave constructed in accordance with my invention after said punch and dies have been brought together for such formation.

Fig. 2 is a similar view after said punches have been raised from the dies with the completed eave.

I have shown a base plate 10 with a flanged end 11 having secured thereto a strip 12 that overhangs, as at 13.

Fastened in a groove 14 of the plate 10 is a die member 15 adapted to form the ornamented side of an eave and placed opposite and parallel with the die 15 is another die member 16 adapted to form the straight side of an eave. The die 16 has positioned on the top thereof an angle bracket 50 to aid in holding in place the metal to be worked.

Loosely positioned between the flanged end 11 and the die 15 is an S shaped or dog

bar 17 that has the rounded or rocker bottom 18 and the chamfered top 19 with an under side 20.

A spring 21 having one end fastened to a clip 22 secured to the strip 12, and the other end to an eye bolt 23 threaded into the bar 17, holds said bar firmly against the portion 13 of the strip 12.

Above the die members 15 and 16 is a plunger 24 with a punch holding block 25 that has an elongated punch portion 26 integral therewith and shoulders 27 and 28. Secured to one side of the portion 26, and abutting the shoulder 27 is a punch 29 corresponding to the inside of the ornamented portion of an eave, and secured to the other side of portion 26, and abutting the shoulder 28, is a straight punch 30. A strip 51, for holding one edge of the eave is placed on the side of the block 25 so that a portion thereof overlaps the punch 29.

Hangers 31, supporting a shaft 32, are placed on one side of the block 25 and keyed onto the shaft 32 is a finger member 33 that is adapted to have its lower end fitted into groove 34 in the top of the punch 29.

Fulcrumed on the shaft 32 at right angles to the finger 33 is a lever 35 that extends through a slot 36 in the block 25. A rod 37 having a shoulder 38 with a smaller lower end portion 39 extending therefrom, is secured to a stationary portion 40 of the press by bolts 41. The portion 39 of the rod 37 has projected through its aperture 42 the lever 35 and a nut 43 is placed on the end of the rod.

Thus, when the plunger 24 is raised, the lever 35 will reciprocate on portion 39 of the rod until the same comes in contact with the shoulder 38, at which point the lever is pushed downwardly, thus partially rotating the shaft 32, so that the finger 33 will move out from the groove 34 to push the edge 49 of the trough 47 off the edge of the punch member 29. In like manner, the lever 35 reciprocates on the rod when the plunger is being lowered until it bears against the nut 43, at which point the shaft 32 is turned until the finger 33 is brought against the block 25, at the end of the plunger stroke.

A second plunger 44 is provided above the bar member 17 and a block 45 having a chamfered edge 46, adapted to bear against and slide on the top 19, to push forward the bar 17, is secured thereto.

In the practical use of my improved device, a piece of sheet metal is placed on the top of die members 15 and 16, and when the members 15, 16, 29 and 30 are brought together by the lowering of the plunger 24, the metal will be transformed into a trough 47, having an ornamented side 48 with a straight end. At this point, the plunger 44 is lowered so as to push the bar 17 forward, thus bending, as at 49, the end of the trough at right angles to its original position on the top of the punch 29. The plunger 44 is then raised to allow the bar 17 to be brought back by the spring 21 to its original position, and then the plunger 24 is raised so that the punch members 26, 29 and 30 are raised from the die members 15 and 16.

The trough 47 that is formed is raised with the punch members 29 and 30 when the latter are raised, and the raising of the plunger 24 causes the finger 33 to move outwardly, thereby pushing the end 49 of the eave clear of the punch member 29, thus making it easy to displace the eave from the punch members.

Although I have only shown one finger 33, one lever 35 and one spring 21, I desire it to be understood that a number of these parts may be used in keeping with the size of my improved device.

It will be obvious that various changes may be made in the arrangement, combination and construction of the various parts of my improved device without departing from the spirit of my invention, and it is my intention to cover by my claims such changes as may be reasonably included within the scope thereof.

What I claim is:

1. The method of forming an eave which consists of depressing a strip of metal with a die to form a trough, and in the same operation bending a portion of the metal over a portion of the die member, and then pushing such bent over portion from the die as the die is raised while leaving said portion in its bent over form.

2. A device for forming an ornamented eave comprising a die and a plunger, means for bringing the die and plunger together to form an eave trough, means for bending at least one longitudinal edge of the eave over a portion of said plunger while the plunger

and die are closest together, and means for pushing said bent-over edge from said plunger, while leaving it in its bent over form when the plunger and die are being separated.

3. A device for forming an eave comprising a die and a plunger having punch members secured thereto, means for bringing the die and punch members together to form an eave trough, means for bending at least one longitudinal edge of the eave over a portion of one of said punch members while said die and plunger are closest together, a shaft secured to said plunger, means to partially rotate said shaft and fingers keyed to said shaft adapted to push said bent over edge from said punch when the plunger and die are being separated.

4. A device for forming an eave comprising a die and a plunger having punch members secured thereto, means for bringing the die and punch members together to form an eave trough having at least one ornamented side, an S-shaped or dog bar positioned adjacent said die, a second plunger adapted to push said bar forward when lowered whereby a portion of said ornamented side is bent at right angles over a portion of one of the punch members while said first plunger and die are closest together and means for bringing said bar back to its original position when said second plunger is raised.

5. A device for forming eaves comprising a die and a plunger having punch members secured thereto, means for bringing said die and punch members together to form an eave trough having at least one ornamented side, a dog bar positioned adjacent said die, a second plunger adapted to push said bar forward whereby a portion of said ornamented side is bent over a portion of one of the punch members while the said first plunger and die are closest together, means to reciprocate said second plunger, a shaft secured to said first plunger, means adapted to partially rotate said shaft and fingers keyed to said shaft adapted to push said bent over edge from said punch member when said first plunger and die are being separated.

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